

III. REMARKS

Claim 1 is amended.

Claims 1-5, 7-10 and 13 are patentable under 35 U.S.C. 102(b) over Mages (US 5,772,386). Claim 1 recites that the buffer transport is operative for moving the substrate magazine between a first position and a second position. Claim 1 also recites that when in the first position the substrate magazine communicates with the aperture, and when in the second position the substrate magazine is offset from the first position and is buffered. The aperture is configured for loading and unloading substrates from a substrate magazine as recited in claim 1. Claim 1 further recites that the first and second positions are horizontally coplanar. Mages discloses something different.

In Mages a gripper (53) which is moveable vertically and horizontally (by horizontal drive 55 and elevator 56) is used to transfer the transporting containers (46) from the storage shelves (45), on which the transporting containers are vertically buffered (see Figs. 1 and 3), to a plane that corresponds to the ergonomic height for manually loading or removing the transporting containers (46) from the storage through the lockable loading opening (50) (Col. 6, L. 16-32). Mages does not disclose or suggest that "the buffer transport is operative for moving the substrate magazine between a first position and a second position, wherein when in the first position the substrate magazine communicates with the aperture, and when in the second position the substrate magazine is offset from the first position and is buffered, and wherein the first and second positions are horizontally coplanar" where the

aperture is "configured for loading and unloading substrates from a substrate magazine" as recited in Applicants claim 1.

There is nothing to suggest the transporting containers (46) in Mages are "buffered" in a second position that is "horizontally coplanar" with the first position. All that is disclosed in Mages is that the lockable loading opening is at an ergonomic height (see e.g., Col. 6, L. 10-15 and L. 27-32).

It is further noted that the lockable loading opening (50) of Mages is not the same as the "aperture" recited in Applicant's claim 1 because the entire transporting container (36) is removed from lockable loading opening (50).

Thus, it is submitted that the above noted claim language and corresponding arguments clearly and specifically point out that the language of Applicant's claim 1 is distinguished over Mages because Mages does not disclose or suggest that "the buffer transport is operative for moving the substrate magazine between a first position and a second position, wherein when in the first position the substrate magazine communicates with the aperture, and when in the second position the substrate magazine is offset from the first position and is buffered, and wherein the first and second positions are horizontally coplanar" where the aperture is "configured for loading and unloading substrates from a substrate magazine" as recited in Applicants claim 1. Therefore, claim 1 is patentable.

Claims 2-5, 7-10 and 13 depend either directly or indirectly from claim 1 and are patentable at least by reason of their respective dependencies.

Further, claim 5 recites that the second position is in a peripheral area and the first position is in a central area.

This feature is not disclosed or suggested in Mages. The Examiner merely states that this feature is disclosed in the figures and is inherent from Mages. However, the Figures of Mages disclose a storage having a first and second sides. On one side of the storage the transporting containers (46) are loaded or removed through the lockable loading opening (50). On the other side the transporting containers (46) are vertically stacked in the storage shelves (45). If the Examiner considers the position of the storage shelves (45) to be the first position, it is not located in a "central area" because the storage shelves are located on one side of the storage while the open space (47) is located on the other side. The same is true if the Examiner considers the open space (47) including the lockable loading opening (50) to be the "first position". There is no disclosure or suggestion in Mages of "the first position" being "in a central area" as recited by Applicant.

Claim 11 is patentable under 35 U.S.C. 103(a) over Mages. Claim 11 recites that the sensor is rotatably mounted on a frame of the station such that upon removal of a door of the magazine, the sensor extends inside the magazine. Mages does not disclose how the sensor (21) is mounted. All that is disclosed in Mages is that "an index sensor 21 detects the projections 18 and the disk shaped object 19 during the vertical adjustment of the transporting container 6". It would not be obvious to one skilled in the art to modify Mages to achieve what is claimed in Applicant's claim 11 without the impermissible use of hindsight because there is no disclosure or suggestion that the sensor (21) is "rotatably mounted on a frame of the station such that upon removal of a door of the magazine, the sensor extends inside the magazine" as recited by Applicant. It is also submitted that the Examiner is using hindsight in light of

Applicant's disclosure in making the rejection as the Examiner explicitly refers to Applicant's disclosure in finding support for the rejection.

When "the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference". In re Rijckaert, 28 USPQ2d 1955, 1057 (Fed. Cir. 1993). The Examiner is requested to provide an indication as to where any such teaching, suggestion or motivation to modify Mages as suggested by the Examiner appears in the reference. Absent such a teaching, it is submitted that a *prima facie* case of obviousness over Mages under 35 U.S.C. 103(a) is not established.

Claims 11, 14-17, 19-20, 22 and 24-28 are patentable under 35 U.S.C. 103(a) over Mages and Gordon (US 6,013,920). With respect to claim 11, it is submitted that Mages does not disclose or suggest the features of claim 11 for the reasons described above. It is also submitted that combining Mages with Gordon fails to remedy the above noted defects of Mages.

Mages discloses that the end effector (42) for removing the door (48) includes a wafer sensor (86) (Col. 5, l. 61-65). Mages does not disclose or suggest that the sensor is "rotatably mounted on a frame of the station such that upon removal of a door of the magazine, the sensor extends inside the magazine" as recited in Applicant's claim 11.

The sensor (86) in Gordon is mounted in the end effector (42) and does not extend into the FOUP (22). As can be seen in Figure 8, the pair of optical detectors (106) are mounted flush with the surface of the end effector (42). Thus, the sensor (86) does not extend into the FOUP. Furthermore, the sensor

(86) in Gordon is only moved vertically or horizontally. There is no disclosure or suggestion in Gordon that the sensor is "rotated" as called for in Applicant's claim 11. Therefore, claim 11 is patentable because neither Mages nor Gordon, individually or in combination, disclose or suggest all the features of Applicant's claim 11.

Claim 14 recites that the fluidic magazine door drive comprises an encoder for determining the vertical position of the sensor. The combination of Mages and Gordon does not disclose or suggest this feature.

Mages discloses that the lifting cylinders (32, 33) are provided for vertical adjustment and for adjusting the arm (29) relative to the wall element. The lifting cylinder is swivelable together with the support plate (34) about an axis X-X until reaching a stop (35) by means of the action of the lifting cylinder. (Col. 5, L. 29-35). Mages does not disclose "encoders" on the lifting cylinders. Combining Mages with Gordon fails to remedy this defect.

Gordon merely discloses that the end effector (42) and the door drive mechanism (72) includes a lead screw (102) together with a stepping motor (104). Data specifying a Z-axis location for the FOUP (22) in Gordon can be obtained by counting pulses supplied to the stepper motor (104).

Thus, neither Mages nor Gordon, individually or in combination, discloses a fluidic magazine door drive that comprises an encoder for determining the vertical position of the sensor.

The only sensor disclosed in Mages is sensor (21) (Col. 5, L. 8-10). Although Mages does not disclose how the sensor (21) is mounted, Figure 1 of Mages clearly shows that the sensor is not

mounted on the closure opener (23, 29). The sensor (21) in Mages works in conjunction with the elevator (5) for vertical indexing movement of the elevator (Col. 5, L. 2-10). Therefore, the sensor (21) cannot be an "encoder" as recited in Applicant's claim 14.

In Gordon the stepper motor (104) of the screw drive for opening the door is used to determine a location of the FOUP (22) and nothing more. As noted above the location of the screw drive is tracked by pulses supplied to the stepper motor (104). Therefore, the stepper motor of Gordon is not an "encoder" as called for in Applicant's claim 14.

Thus, claim 14 is patentable because the combination of Mages and Gordon does not disclose or suggest all the features of claim 14.

Moreover, it is respectfully submitted that there is no legal motivation to combine Mages with Gordon. In order to establish a *prima facie* case of obviousness under 35 U.S.C. 103(a), there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. There must also be a reasonable expectation of success, and the reference(s), when combined, must teach or suggest all of the claim limitations. (See M.P.E.P. § 2142). As noted above, the combination of Mages and Gordon does not disclose or suggest each feature of Applicant's claims. Thus, a *prima facie* case of obviousness cannot be established.

Neither Mages nor Gordon provide any suggestion or motivation to be combined or modified as proposed by the Examiner and the

Examiner's proposition that Applicant's invention would be obvious as recited in the claims is not supported by the factual contents of Mages or Gordon.

In making the rejection of claim 14 the Examiner refers to the following features of Mages: the elevator (5) for positioning the open substrate magazine (6) and the sensor (21) for providing elevator vertical position information. However, these features do not determine the vertical position of a sensor of a fluidic magazine door drive. The sensor (21) in Mages is for indexing the movement of the elevator (5).

The end effector (42) and the door drive mechanism (72) of Gordon includes a lead screw (102) together with a stepping motor (104). The stepper motor (104) of the screw drive for opening the door is used to determine a location of the FOUP (22) and nothing more. The position of the drive for opening the door is tracked through pulses that are supplied to the stepper motor (104). Thus, there is no motivation to provide an "encoder" on the lead screw drive of Gordon.

One skilled in the art would not be motivated to combine Mages with Gordon without the impermissible use of hindsight in light of Applicant's disclosure as none of the features of the references cited by the Examiner when combined disclose what is claimed by Applicant. If Mages and Gordon were combined the result would be the elevator/storage system of Mages having the lead screw door opener of Gordon and nothing more. There is absolutely no motivation for modifying Mages to include, as part of a fluidic magazine door drive, an encoder for determining the vertical position of the sensor.

When "the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference". In re Rijckaert, 28 USPQ2d 1955, 1057 (Fed. Cir. 1993). The Examiner is requested to provide an indication as to where any such teaching, suggestion or motivation appears in the reference. Absent such a teaching, it is submitted that a *prima facie* case of obviousness over Mages and Gordon under 35 U.S.C. 103(a) is not established.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

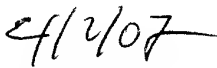
The Commissioner is hereby authorized to charge payment for a three-month extension of time and any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,



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